

TOSHIBA Field Effect Transistor Silicon N Channel Dual Gate MOS Type

3SK226

TV Tuner, VHF RF Amplifier Applications

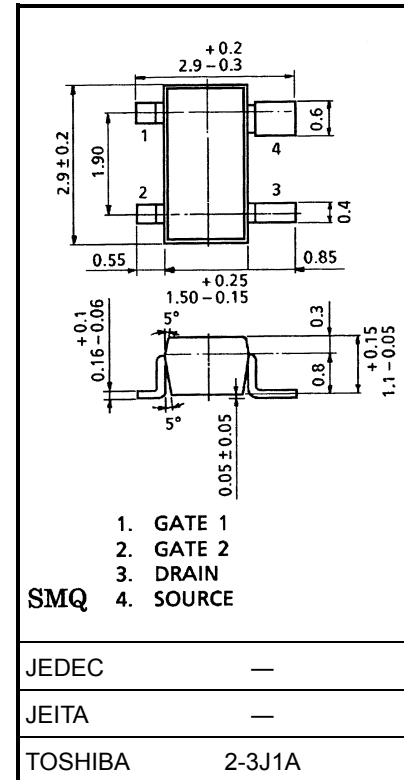
FM Tuner Applications

Unit: mm

- Superior cross modulation performance.
- Low reverse transfer capacitance: $C_{rss} = 0.015$ pF (typ.)
- Low noise figure: NF = 1.1dB (typ.)

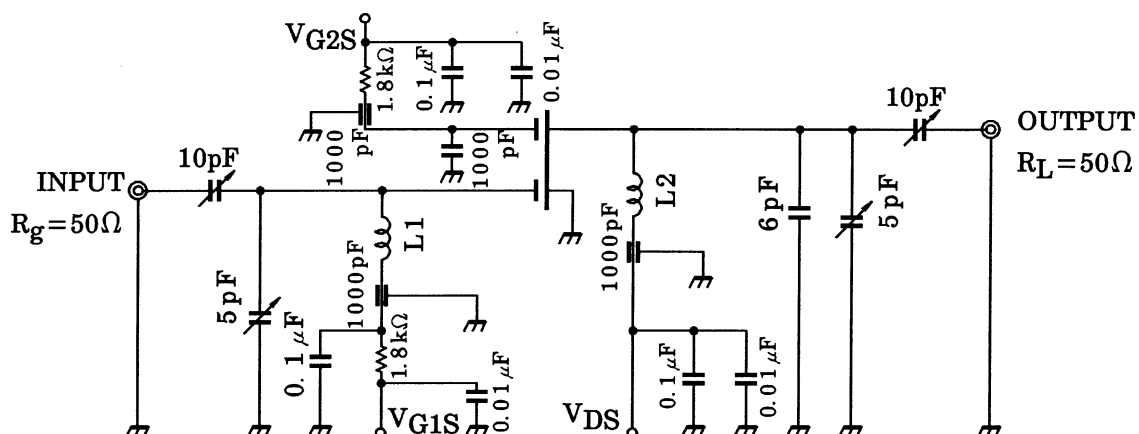
Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Rating | Unit |
|---------------------------|-----------|---------------|------------------|
| Drain-source voltage | V_{DS} | 13.5 | V |
| Gate 1-source voltage | V_{G1S} | ± 8 | V |
| Gate 2-source voltage | V_{G2S} | ± 8 | V |
| Drain current | I_D | 30 | mA |
| Drain power dissipation | P_D | 150 | mW |
| Channel temperature | T_{ch} | 125 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | $-55\sim 125$ | $^\circ\text{C}$ |

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Weight: 0.013 g (typ.)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|-------------------------------|----------------|--|------|-------|----------|------|
| Gate 1 leakage current | I_{G1SS} | $V_{DS} = 0, V_{G1S} = \pm 6\text{ V}, V_{G2S} = 0$ | — | — | ± 50 | nA |
| Gate 2 leakage current | I_{G2SS} | $V_{DS} = 0, V_{G1S} = 0, V_{G2S} = \pm 6\text{ V}$ | — | — | ± 50 | nA |
| Drain-source voltage | $V_{(BR)DSX}$ | $V_{G1S} = -4\text{ V}, V_{G2S} = -4\text{ V}, I_D = 100\text{ }\mu\text{A}$ | 13.5 | — | — | V |
| Drain current | I_{DSS} | $V_{DS} = 6\text{ V}, V_{G1S} = 0, V_{G2S} = 4.5\text{ V}$ | 0 | — | 0.1 | mA |
| Gate 1-source cut-off voltage | $V_{G1S(OFF)}$ | $V_{DS} = 6\text{ V}, V_{G2S} = 4.5\text{ V}, I_D = 100\text{ }\mu\text{A}$ | 0 | — | 1.0 | V |
| Gate 2-source cut-off voltage | $V_{G2S(OFF)}$ | $V_{DS} = 6\text{ V}, V_{G1S} = 4\text{ V}, I_D = 100\text{ }\mu\text{A}$ | 0.5 | 1.0 | 1.5 | V |
| Forward transfer admittance | $ Y_{fs} $ | $V_{DS} = 6\text{ V}, V_{G2S} = 4.5\text{ V}, I_D = 10\text{ mA}, f = 1\text{ kHz}$ | — | 13 | — | mS |
| Input capacitance | C_{iss} | $V_{DS} = 6\text{ V}, V_{G2S} = 4.5\text{ V}, I_D = 10\text{ mA}, f = 1\text{ MHz}$ | 2.1 | 2.7 | 3.3 | pF |
| Reverse transfer capacitance | C_{rss} | | — | 0.015 | 0.03 | pF |
| Power gain | G_{ps} | $V_{DS} = 6\text{ V}, V_{G2S} = 4.5\text{ V}, I_D = 10\text{ mA}, f = 200\text{ MHz (Figure 1)}$ | 23 | 27 | — | dB |
| Noise figure | NF | | — | 1.1 | 2.2 | dB |

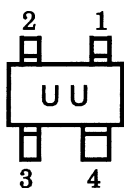


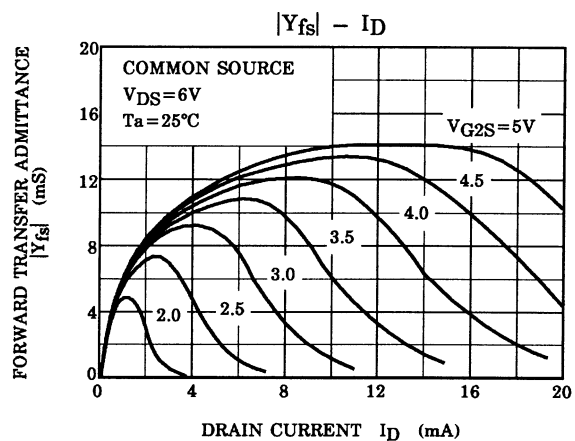
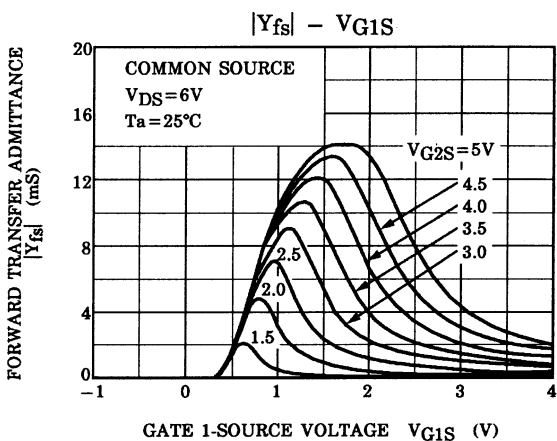
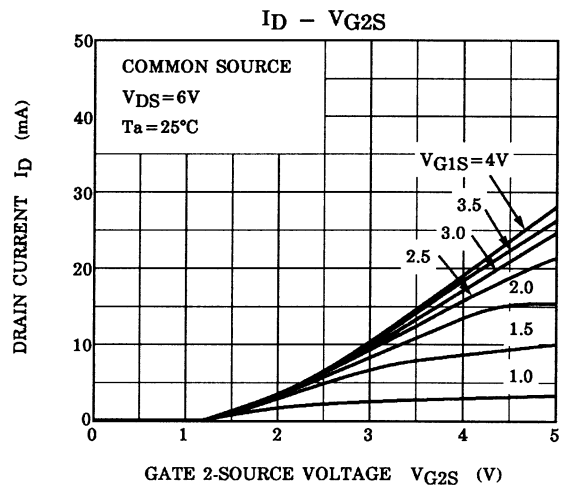
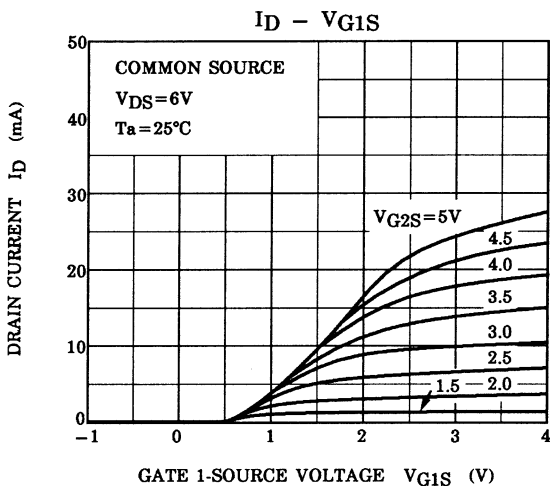
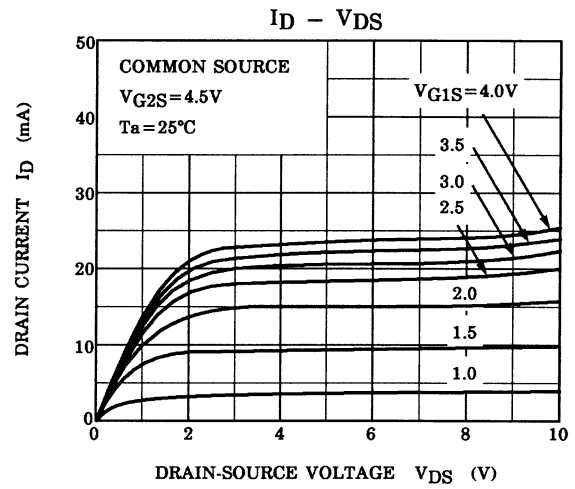
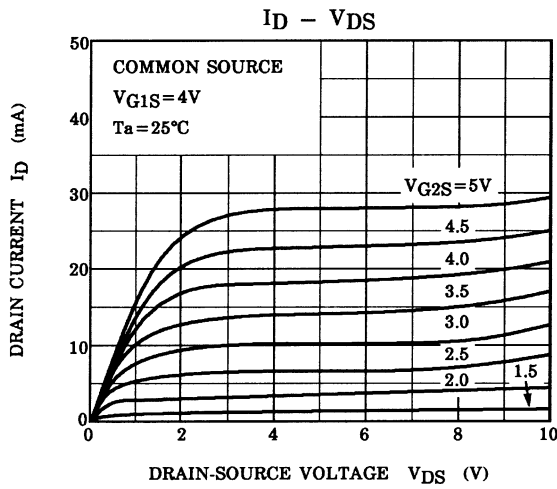
L1: 1 mmφ Ag plated copper wire, 2 turns, 8 mm ID

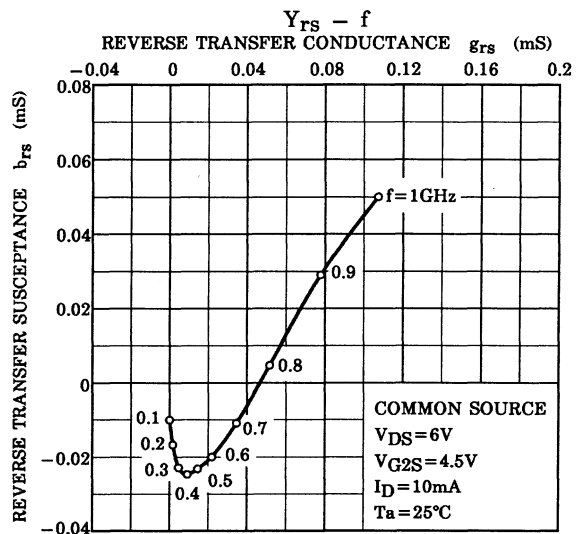
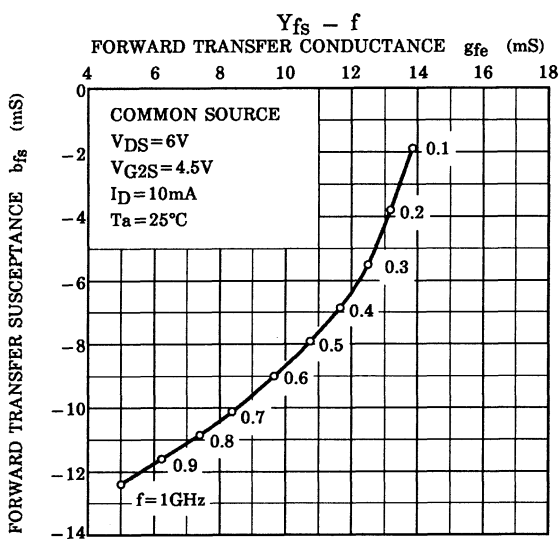
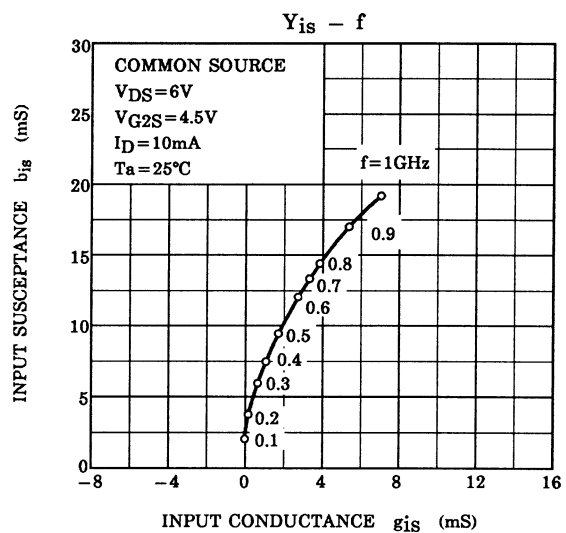
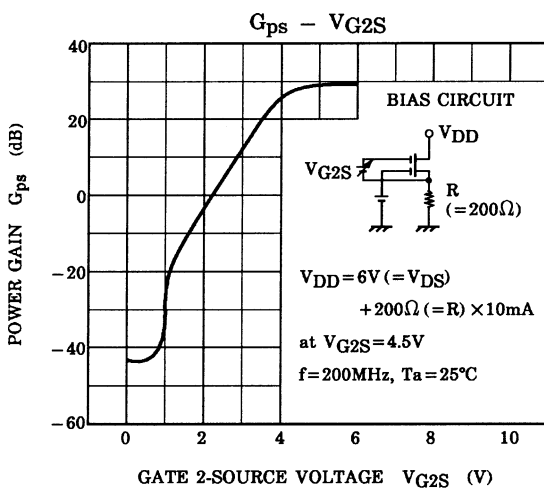
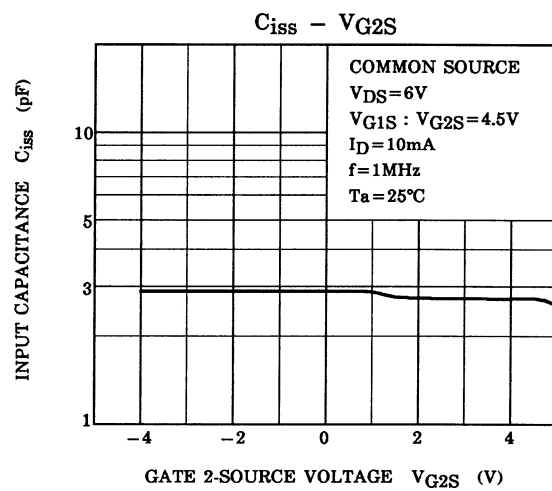
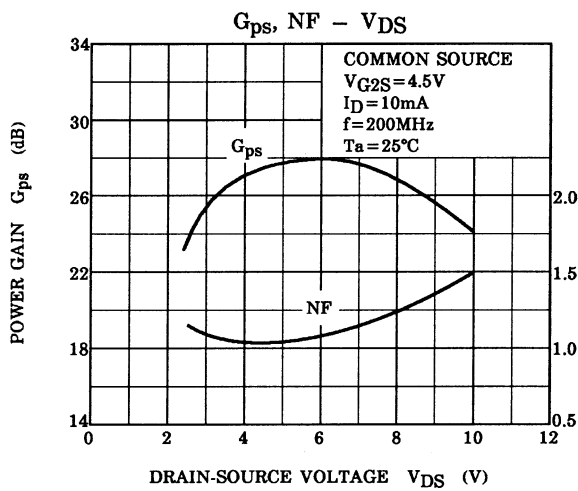
L2: 1 mmφ Ag plated copper wire, 2.5 turns, 8 mm ID

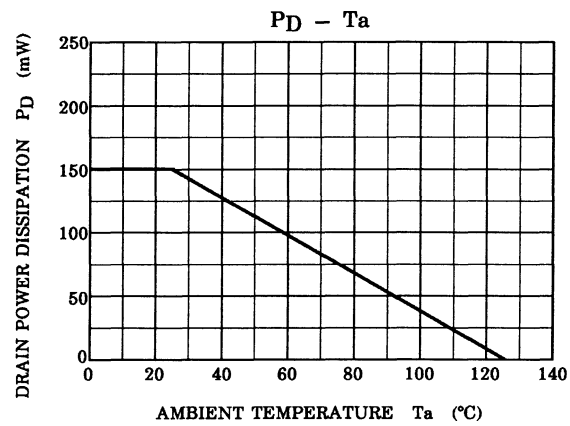
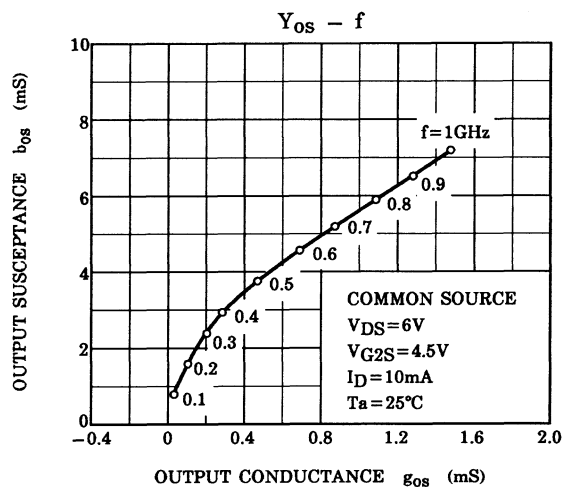
Figure 1 200 MHz, G_{ps} NF Test Circuit

Marking









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